

# Food Adulteration & Our Rights - I



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# Types & Sources of Adulteration

S#	Type	Objective
1	Physical	Increasing weight
2	Chemical	Prolonging shelf life
3	Microbiological	Due to carelessness
4	Hygienic	Reducing cost
5	Packaging	Reducing cost
6	Economic	Earning extra profit



# Definition of Adulterated Food

A world over trusted organization FDA Act (1938) provides that food is "adulterated" if it bears or contains any one of the following criteria:

- (1) "Poisonous or deleterious substance" which may render it injurious to health;
- (2) Any *added* poisonous or *added* deleterious substance (other than a pesticide residue, food additive, color additive, or new animal drug, which are covered by separate provisions) that is unsafe;
- (3) In whole or in part, of any poisonous or deleterious substance which may render the contents injurious to health; or
- (4) A pesticide chemical residue that is unsafe. (Note: EPA establishes tolerances for pesticide residues in foods, which are enforced by the FDA.)

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Food also meets the definition of adulteration if it bears or contains:

- (5) An unsafe food additive;
- (6) An unsafe new animal drug;
- (7) An unsafe color additive;
- (8) In whole or in part, of "any filthy, putrid, or decomposed substance" or is otherwise unfit for food; or
- (9) It has been prepared, packed, or held under unsanitary conditions (insect, rodent, or bird infestation) whereby it may have become contaminated with filth or rendered injurious to health.

# Definition of Adulterated Food

Further, food is considered adulterated if:

- (10) It has been irradiated and the irradiation processing was not done in conformity with a regulation permitting irradiation
- (11) It contains a dietary ingredient that presents a significant or unreasonable risk of illness or injury under the conditions of use (for example, foods or dietary supplements containing aristolochic acids, which have been linked to kidney failure);
- (12) A valuable constituent has been omitted in whole or in part or replaced with another substance; damage or inferiority has been concealed in any manner; or a substance has been added to increase the product's bulk or weight, reduce its quality or strength, or make it appear of greater value than it is (this is "economic adulteration"); or

The Federal Meat Inspection Act and the Poultry Products Inspection Act contain similar provisions for meat and poultry products.



# Injurious Adulterants in Foods

S#	Foods	Adulterants	Effects
1	Cereals	Straw, husk, mud, stones, grit, marble chips, sand, inferior quality grains, infected or insect infested grains	Damage digestive tract
2	Pulses	Straw, inferior quality grains, infected grains, yellow dye, sand, filth	Damage digestive tract
3	Wheat flour & screenings	Grit, infested stock, excess of bran	Damage digestive tract
4	Milk	Starch, water, milk of other animals, extraction of fats, synthetic milk, detergent, fertilizer, hydrogen peroxide, etc.	Loss of natural conformity
5	Edible oils	Mineral oil (white oil, petroleum fractions), rancid oil, artificial colors	Loss of Vit. A & E and Cancer
6	Honey	Sugar syrup, purified molasses	Onset of diabetes
7	Turmeric & mixed spices	Starch colored with lead chromate or yellow dye	Anemia, abortion, paralysis, brain damage
8	Coriander	Powdered cow/horse dung, saw dust, starch	Damage digestive tract
9	Black pepper	Dried papaya seeds	Loss of taste
10	Chilies	Saw dust, color, dust	Loss of taste

# Injurious Adulterants in Foods

S#	Foods	Adulterants	Effects
11	Tea	Foreign leaves or exhausted tea leaves, saw dust, husk, artificially colored	Cancer
12	Fruits, viz. apples	Sprayed with lead arsenate	Dizziness, chills, cramps, paralysis, death
13	Rat contacts	Rat poison barium carbonate	Violent peristalsis, arterial hypertension, muscular twitching, convulsions, cardiac disturbances
14	Fruit juices & soft drinks	Contact with cadmium plated vessels / equipment / water / shell-fish	Increased salivation, acute gastritis, liver and kidney damage, prostrate cancer
15	Water, liquors	(a) Cobalt	Cardiac insufficiency / heart failure
		(b) Lead	Lead poisoning (insomnia, anemia, constipation, mental retardation, brain damage)
16	Seed grains & fish	Mercury fungicide treatment	Brain damage, paralysis, death
17	Chinese food, meat	MSG (by	Brain damage, mental retardation in infants
		Non-permitted color or permitted	Mental retardation, cancer and other

# Summary

- ❑ Selection of wholesome and non-adulterated food is essential for daily life to make sure that such foods do not cause any health hazard.
- ❑ Although it is not possible to ensure wholesome food only on visual examination because toxic contaminants are present in ppm/ppb level. However, it ensures absence of insects, visual fungus, foreign matters, etc before purchase.
- ❑ Label declaration on packed food is very important for knowing the ingredients and nutritional value. It also helps in checking the freshness of the food and the period of best before use.
- ❑ The consumer should avoid taking food from an unhygienic place and food being prepared under unhygienic conditions.
- ❑ Consumption of cut fruits being sold in unhygienic conditions should be avoided.



# End of Part I

## Comments & Questions???

